AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1-17. (cancelled)

18. (currently amended) A method of manipulating neuronal ion channels, comprising: transfecting a fast-spiking neuronal cell, wherein said fast spiking neuronal cell is capable of sustained high frequency discharge without significant accommodation, and wherein said cell comprises a co-assembled complex of mammalian Kv3.1, Kv3.2, Kv3.3 and Kv3.4, with a vector encoding an siRNA directed against an mRNA encoding a mammalian Kv3.4 protein wherein said siRNA is capable of inhibiting Kv3.4 expression in said cell, and wherein said inhibition of Kv3.4 expression results in a decrease in said sustained high frequency discharge in said cell <u>but not in cells lacking said co-assembled complex</u>.

19. (previously presented) The method of claim 18, further comprising the step of transplanting said cell into a subject.

20. (previously presented) The method of claim 18, wherein said frequency is greater than 100 Hz.

21. (previously presented) The method of claim 18, wherein said frequency is greater than 150 Hz.

22-23. (cancelled)

24. (previously presented) The method of claim 18, wherein said mammalian Kv3.4 is rat.

25. (previously presented) The method of claim 18, wherein said mammalian Kv3.4 is human.

26. (new) A method of manipulating neuronal ion channels, comprising:

transfecting a fast-spiking neuronal cell, wherein said fast spiking neuronal cell is capable of sustained high frequency discharge without significant accommodation, and wherein said cell comprises a co-assembled complex of mammalian Kv3.1, Kv3.2, Kv3.3 and Kv3.4, with a vector encoding an siRNA having a nucleic acid selected from the group consisting of SEQ ID NOs: 3 and 4, wherein said siRNA is capable of inhibiting Kv3.4 expression in said cell, and wherein said inhibition of Kv3.4 expression results in a decrease in said sustained high frequency discharge in said cell but not in cells lacking said co-assembled complex.

27. (new) A method of treating Parkinson's disease in a subject, comprising transfecting a fast-spiking neuronal cell, wherein said fast spiking neuronal cell is capable of sustained high frequency discharge without significant accommodation, and wherein said cell comprises a co-assembled complex of mammalian Kv3.1, Kv3.2, Kv3.3 and Kv3.4, and wherein said cell is in a subject diagnosed with Parkinson's disease, with a vector encoding an siRNA directed against an mRNA encoding a mammalian Kv3.4 protein wherein said siRNA is capable of inhibiting Kv3.4 expression in said cell, and wherein said inhibition of Kv3.4 expression results in a decrease in said sustained high frequency discharge in said cell but not in cells lacking said co-assembled complex.